

Access to Care and Wealth Assessment In Clients of The HealthStore Foundation

By

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Abstract

Context: In developing countries, access to health care services and essential medications is often limited. To combat this, NGOs, as well as governments have encouraged the private sector to help fill the gap. In Kenya, one such organization is The HealthStore Foundation. The HealthStore Foundation organizes franchises called CFWSHops, which are owned locally. Each shop provides basic consultation and medication distribution services. The stated goal of the HealthStore Foundation is to provide sustainable health care consultations and reliable medication.

Objective: To create a program plan and evaluation of the HealthStore Foundation. To design a study that will assess program outcomes. The program outcomes assessed will be (a) barriers to care and (b) relative wealth of the clients who attend the CFWSHops.

Design: Research The HealthStore Foundation through articles, websites, and conversations with employees. Create a survey to collect information on barriers to care of CFWSHops clients. Use a pre-existing survey on wealth status created by the Demographic and Health Survey in order to compare the wealth status of CFWSHops clients with the wealth status of a national sample of Kenyans.

Outcome Measures: 1. Descriptive analysis of barriers to care before and after clients began using CFWSHops. 2. Bivariate analysis comparing barriers to care before and after clients began using CFWSHops. 3. Descriptive analysis of the proportion of CFWSHops clients in each quintile of relative wealth compared to a similarly urban sample.

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Introduction

Modern medicine has therapeutic knowledge of medications that can treat many of the major causes of morbidity and mortality in the world. The problem at this stage is not the lack of effective therapeutics but rather the lack of effective and equitable distribution of these therapeutic options. For example, a significant portion of childhood mortality in certain regions of the world is caused by diseases such as diarrhea, pneumonia, measles, malaria, and HIV.¹ These diseases can be largely prevented with simple, inexpensive therapeutics.

Most of the preventable mortality caused by infectious disease exists in Sub-Saharan Africa and South Asia.¹ As a result, these governments and NGO's are designing and carrying out a variety of strategies to help combat preventable morbidity and mortality. Some strategies use central governmental agencies to organize equitable health care, while other strategies utilize the private sector for efficient, sustainable distribution of health care.²⁻⁴

In Kenya, the problem of excess mortality, particularly childhood mortality, is grave - and has only worsened between 1998 and 2003.¹ In Kenya, the factors influencing health outcomes are varied and complicated. For example, the HIV epidemic, the stagnant economy, and precarious political situation contribute to fragmented health care.

With basic knowledge of Kenya's health care problems and awareness of the minimal health infrastructure in Kenya, The HealthStore Foundation seeks to be a part of the solution by expanding the availability of quality medications and nurses through the use of the private sector. They depend on principles of economic efficiency inherent in the private sector. Specifically, their model is to recruit members of the local community

to purchase franchise health stores, called CFWshops. Each CFWshop employs a nurse to provide basic consultation services and to sell basic medications. Each individual store is a for-profit entity, with the franchise owner keeping the profits.

The HealthStore Foundation's goal is to improve access to basic health services in the communities where the stores are located, in keeping with the assumption that improved access to basic diagnostic skills and quality medications will reduce morbidity and mortality. Creating lines of distribution and monitoring of medication is core to The HealthStore Foundation. As the number of CFWShops has grown, The HealthStore Foundation has documented the process of activities that need to happen in order to select franchise owners and encourage financial sustainability, and has required strict record keeping of patients seen and medications distributed.

The HealthStore Foundation is attempting to achieve two contrasting goals at once. The two divergent goals are to create a sustainable business while attempting to reduce access barriers for those who may not be able to afford services. However, they have yet to systematically assess the barriers to care of their clients or the relative wealth or poverty of the clients they are serving.

Evaluation is important for The HealthStore Foundation as it specifically addresses the ways in which they can adjust program activities and focus based upon barriers to care. On a different level, gaining an objective understanding of the relative wealth of the clients may help the management clarify the mission of the Foundation. In addition, other similar organizations and countries utilizing the private sector for distribution of basic health care could benefit from this research. Practically, other organizations could benefit by seeing the barriers faced by CFWShop clients. More theoretically, I hope to show that the DHS wealth index can be translated to a program evaluation context. If a program can use the wealth index to compare their populations

with an appropriately selected sample from the national DHS survey, we will have a tool to learn valuable information about specific subpopulations.

Therefore, in this study, I describe a research design that can be used by The HealthStore Foundation to inform their activities. I provide a survey to collect health access data that will contribute to the general knowledge of health care access and barriers, supplementing what is already known about density and distribution of health facilities. More directly, the survey results will provide specific program feedback to The HealthStore Foundation. Additionally, I have adapted a tool from the Kenya Demographic and Health Survey called the wealth index. This index will allow comparison between the wealth of the clients of The HealthStore Foundation and the wealth of other urban populations of Kenya.

Literature Review

Kenya Health Data

Demographic and Health Survey's (DHS) have collected household data throughout Kenya since 1989.⁵ The data collection technique and survey questions have remained relatively consistent over time, which affords accurate comparisons of longitudinal data. Individual data points, such as the precise percentage of children with malaria, are not extremely accurate or useful by themselves, but trends help us evaluate overall health systems and identify needs.

Two ways in which the health of a country can be measured are the infant mortality rate and the under-5 mortality rate. Based upon DHS data, both of these markers have worsened in Kenya in every survey since 1989. In 1989, the infant mortality rate and the under-5 mortality rate were 60.7 and 89.8 per 1000, respectively.⁶ The most recent survey, conducted in 2003, reported infant mortality and under-5 mortality rates of 77.2 and 114.6 per 1000, respectively.⁶ Even though this rate is lower than some of the other countries in the region, the downward trend is informative.

According to the Demographic and Health Survey, the five most common causes of under-5 mortality in Kenya are acute respiratory infection (ARI), diarrhea, measles, malaria, and malnutrition and anaemia.^{5 6} To get a better idea of actual percentage of deaths from each category, we can look at a health surveillance study in western Kenya. Adazu et al reported that the top causes of mortality for children 1 month to 12 years were malaria (28.9%), anemia (19.8%), diarrhea/dehydration (16.2%), pneumonia/ARI (15.9%), malnutrition (6.1%), and sepsis/meningitis (5.3%).⁷ It is thought that malaria is the root cause in more than half of the cases of severe anemia.⁸ The summation of the percentage of deaths caused by malaria, diarrhea, ARI, and half of anemia equates to

70.9% of all deaths in this age range. This figure represents mortality than can theoretically be reduced through basic health care, essential medications, and preventive services.

Kenya Health Access

The challenges impeding health improvements throughout Kenya are numerous, complicated, and diverse. The problems generally include the HIV epidemic, unstable government, limited number of health care professionals, and precarious economic conditions. Tied to these general problems is the lack of access to quality care for much of the Kenyan population. There are numerous barriers to access. Some of these include distance, transportation, money, time, perceived quality of care, and cultural norms.⁹⁻¹¹ Provision, and use, of quality health care services is a primary goal of major international health initiatives as it has been shown to reduce mortality and morbidity.^{12,}
¹³ Therefore, many attempts have been made to capture health care access data on both a country and regional level.

Noor et al reported that the number of health care facilities compared to the population of Kenya has increased from 1:26,000 in 1959 to 1:9300 in 1999-2002.¹⁴ Understanding the number of clinics in the country gives some sense of the overall supply, but no idea of the distribution. Assessing the distance between populations and health facilities affords some level of understanding of the distribution of facilities. In this light, Noor et al subsequently showed that more than 60% of Kenyans live within 5km of a health facility.¹⁵

However, there are many variables to understand with respect to health care access beyond the geographic locations. Having a clinic on every street proves futile if patients cannot pay for the medications¹⁶ or if the quality of care is poor⁹. Moreover,

health education of the general population is crucial. Many Kenyan parents feel that a child with a fever or diarrhea is not sick enough to require a trip to see a health care professional.¹¹ A greater depth of understanding of disease and symptoms may help these families make more informed decision and this be more resourceful when a child is ill. Capturing health care access through proxy measures such as the number of health care facilities or distance to a health clinic may not be sufficient to understand the level of health access. Donabedian summed up this problem by writing, “The proof of access is use of service, not simply the presence of a facility.”¹⁷

Medication Quality

Medication quality is taken for granted by the public in developed countries. This is not assured in Kenya. Health experts focused on developing countries have expressed concern about the lack of regulation and lack of post market analysis of medicines delivered in many countries.¹⁸ Post market analysis is crucial because it assesses the products that reach consumers. In contrast, analysis of a product before it reaches the common market will not capture the ways a distributor might manipulate the product. While studies have shown widely discordant results regarding drug quality, recent reviews reveal a worrisome trend. A study in Kenya revealed that 40.5% of over the counter anti-malarial medications tested did not meet United States Pharmacopoeia (USP) standards.¹⁹ Quality Assurance tests can be difficult to carry out because the majority of the drugs meet standards for content of active ingredients, but do not meet standards for dissolution of the drug, which is a harder standard to measure.¹⁸ Dissolution of the active drug in the body is crucial to assurance of a therapeutic effect.

One danger in having substandard medications on the market includes the obvious problem of ineffective treatment of sick patients. Some policy makers have

compared the distribution of substandard drugs to being an accessory to murder.²⁰

Arguably as important, substandard medications may lead to quicker development of resistance patterns in infectious organisms. One solution to this problem would be to implement regulations and quality assurance on all medications that enter the country. This is a monumental task which would certainly take time for any country to implement. In a less developed country, this administrative task is even more difficult.

Distribution of Basic Healthcare in the Private Sector

Two other strategies to provide access to quality, essential medicines have been implemented with some evaluation in mind. The two initiatives, called ADDO Shops and Careshops, are located in Tanzania and Ghana, respectively. Both of these initiatives involve private sector drug distributors to increase access to essential medicines.

The ADDO Shops, which stands for Accredited Drug Dispenser Outlets, was launched in 2003.²¹ The program grew out of a partnership between the Tanzanian Food and Drug Administration, the Tanzanian Ministry of Health, and Management Sciences for Health (MSH).²² MSH is based in Massachusetts and is supported by the Gates Foundation. The immediate motivation from this project was an assessment conducted in 2001 that confirmed the fact that the medication needs of rural citizens were not being adequately met by existing programs. The ADDO solution is to train existing pharmacy distributors on the basics of business, clinical evaluation, and pharmacy. With this training, the retailers can get certification to sell certain prescription drugs, thus improving their business. Other incentives for ADDO accreditation include financing and marketing of the ADDO brand.

Evaluations of the program have shown success in some areas, while room for improvement remains in others.²³ It appears that the training and increased certification

for prescription drug dispensing has been successful. The proportion of patients receiving antibiotics for upper respiratory infections decreased, suggesting more rational use of medicines. A qualitative evaluation carried out in 2006 involving in-depth interviews and focus group discussion found inadequacy of shopkeeper's response to a presenting complaint of diarrhea.²² This illustrates the importance of ongoing clinical education of the shopkeepers.

The Careshops in Ghana followed the same model as the ADDO shops. They were started by a partnership between the Ghana Social Marketing Foundation and MSH to use the private sector in efforts to solve the problem of essential medication distribution. The use of the private sector is particularly important in Ghana because nearly two-thirds of all medication use is through private sector retailers.²⁴ Over the last few years, the shops have increased distribution of essential medications, improved the quality of the shops, and improved the consistency of their medication stock.²⁴ One hope is that the improvement in retailers under the Careshop umbrella may increase the quality of other retailers due to competition.

Both of these shops provide a model for wide scale utilization of the private sector for distribution of essential medications. These organizations have similar goals and thus can learn from the success and failure of each other's evaluation and outcomes. The CFWshops of The HealthStore foundation are different in some fundamental ways. First, the CFWshops are owned and run by nurses who are more highly trained in clinical diagnosis and treatment. Second, CFWshops are, for the most part, new business enterprises, as opposed to ADDO and Careshops, which used existed pharmacy retailers. Finally, The HealthStore Foundation is not working directly with the Ministry of Health or other large public sector organizations.

Political and Economic Context

Kenya regained its independence from colonialism in 1963. In the latter half of the 1960's through the early 1980's, Kenya experienced significant economic growth.³¹ In the late 1980's into the 1990's, the economic growth slowed and the poverty rate increased. In fact, in the late 1990's the country as a whole had a negative growth rate for the first time since independence.³² The poverty rate in Kenya almost doubled throughout the 1990's.³² The stagnant economy occurred in the face of relative political stability and consistent development programs.³¹ In the first part of this century, the economic growth in Kenya rebounded and economic forecasts were positive.³³ In 2006, Kenya's economy grew 6.1%, but the elections at the end of 2007 disrupted the country in many ways. Diverse sectors of the economy, from tourism to tea production to the exportation of roses, all suffered drastically due to violence and the fear of violence. While the violence subsided in a matter of months, the recovery of the economy will take much longer. Most recently, Kenyan exports have struggled as a result of the international financial crisis.

Even though instances of local violence have existed for a variety of reasons, Kenya has never experienced what could be classified as military dictatorship or civil war.³² This period of relative political stability has not translated into gains for most of the measured health indicators.⁶ There are many factors to explain for the lack of health improvements other than the poor economic growth. For example, the HIV epidemic has affected almost all regions in Kenya, decreasing life expectancy and creating hundreds of thousands of orphans.³⁴ In fact, the HIV epidemic likely contributed to the economic stagnation of the 1990's.³⁵ Also, the tribal tensions evident in 2007 political election have always been present under the surface, fanning the flame of political corruption leading to land, economic, and health disparity.³² Regardless of the

challenges expressed, it is clear that Kenya must continue to work to address health care failures of the recent decades.

The DHS Wealth Index³⁰

The DHS Wealth Index is a tool designed for use in the Demographic and Health Surveys (DHS). The purpose of the Wealth Index is to gain an understanding of the socioeconomic status (SES) of an individual through the use of a simple, objective data gathering.

In the past, studies have tended two directions when attempting to determine SES. For example, some studies use education or occupation as a proxy for SES, but this is not nuanced enough and makes great assumptions about the direct relationship of SES to education. Other researches attempted to gather more rigorous SES information through income, consumption, or expenditures. However, attempting to gather this information accurately is difficult and more time consuming than is reasonable for a national survey.

The DHS Wealth Index attempts to use information that can be captured reliably in a DHS survey without excessive additional time for the interview. The goal is that all questions related to the wealth index would be easy to answer or observable by the interviewer. Examples of such information about the SES of an individual include household status, durable goods, and utilities such as water, toilet facility, and fuel. The Wealth Index attempts to use this information “in a systematic fashion to determine a household’s relative economic status.”³⁰

The DHS wealth index does not give an absolute value of SES. Rather, all measures are relative to the other citizens in the given country. The results of each wealth index, as used by the DHS, divide the country into quintiles of SES.

A wealth index gives us an opportunity to relate SES with different measures of health status, including health access and health status. In addition, it gives us the ability to discover objectively the relative levels of health within a country for the purposes of policy and program planning. For the DHS studies in particular, the wealth index is tied to other health information, allowing for a greater understanding of the intersection of SES and health.

The theory of the wealth index calculation, combined with the results of the Kenya DHS, allows us to assess the relative SES of the clients at CFWSHops. Using the same questions as the most recent DHS conducted in Kenya, we can collect information of the SES of CFWSHops clients. There are a very small number of questions that are more effectively observed rather than asked, such as the material of the floor, or the material of the roof. This could be addressed in multiple ways. The person administering the survey could ask to accompany the client to their home to conduct the survey, but this would add significant cost due to the extra time involved. Another option is to eliminate the observable questions from the survey. This would require a reanalysis of the data collected by the DHS, but it is feasible. Removing questions would leave us with fewer indicator variables, possibly leading to the calculation of accurate wealth quintiles. Thus I propose training the surveyors to describe the types of flooring and roofing in a way the respondents can understand. In additions we will provide the surveyors with example materials to show the respondents

Because this wealth index is a relative index, we will compare the SES states of the CFWSHops clients to those of other urban dwellers throughout in Kenya, as well as to those in the same catchment area of the specific CFW shop. This comparison will allow us to determine which quintile of SES the CFWSHops are serving in each location studied.

Program Plan

Program History

In response to the demonstrated need for increased access to medical care and increased access to quality, effective medications, Scott Hillstrom and Eva Ombaka developed the idea for Child and Family Wellness Shops (CFWshops) network and 1997. The organization was subsequently renamed The HealthStore Foundation®. The HealthStore Foundation is an organization that creatively uses the model of private business franchising to help increase access to health care and distribute essential medications in Kenya. Local nurses purchase franchises called Child and Family Wellness Shops. These nurses sell essential medications to the community and diagnose and treat sick walk-in patients for profit.

The first 11 shops were opened in 2000 with Scott Hillstrom and Eva Ombaka's personal funds. These shops were focused on the sales of basic medications and did not provide health care consultation. Over the last 7 years, the HealthStore Foundation has adapted to the success and failures of the shops. they are transitioning from focusing only on the delivery of medications to the delivery of health care consultation, essential medication, and preventive health services. There are two types of outlets. The first is basic drug distribution centers that are owned and operated by community health works. Alternatively, there are clinics that provide basic health evaluations in addition to drug distributions. These clinics are owned and operated by trained nurses. The HealthStore Foundation has discovered that basic drug distribution shops have not been as sustainable as the clinics owned by nurses. Therefore, the HealthStore Foundation is transitioning from focusing only on the delivery of medications to focusing

on the delivery of health care consultation, essential medication, and preventive health services in clinics operated by trained nurses.

Currently, about 65 franchised shops are operating in Kenya. The vision is to increase to 225 shops by 2011. The leaders are also in the planning stages of implementing this strategy in Rwanda with a vision for further expansion. This model may be part of the international solution to the difficulty of providing essential drug distribution and basic health care.

Program Organization

Scott Hillstrom recognized early in the planning stages that any proposed solution to health needs in the developing world should focus on sustainability. Bringing his diverse experiences from law, healthcare, and business, Mr. Hillstrom saw a need to maximize efficiency. To achieve sustainability and efficiency, The HealthStore Foundation is based upon the model of micro franchising. Franchising is a way of organizing a business that allows each individual distributor to own his/her own shops. In this way, the franchise owner is responsible for the success of the shop; reaping the rewards of successes and suffering the consequences of poor management.

The administration of The HealthStore Foundation sets the owners up for success through training, continuing education, acquisition of supplies for bulk prices, and proper location of shops. Importantly, The HealthStore Foundation acquires all medication in bulk from reputable suppliers. Bulk acquisition of medications reduces cost. Integrity of the quality medication is maintained throughout a monitored supply chain.

It is in the interest of both the owner and the central administration for each franchise to succeed. However, if a franchise owner fails to meet strict monitoring and reporting standards, the central administration retains the right to revoke the franchise agreement. The motivation behind this design is to harness the efficiencies inherent in for-profit business. The franchisees own a valuable for-profit business supported under the guidance of a larger organization.

In contrast to the individual shops, The HealthStore Foundation overall is organized as a non-profit program. Even with the efficiencies built into the program through the micro franchising model, The HealthStore Foundation is not fully self-sustaining. The sale of drugs and delivery of health care does not bring in enough money to cover the entire costs of running the business and supporting the central administration. Therefore, The HealthStore Foundation continues to rely on some outside support at the level of about \$1 per patient served.

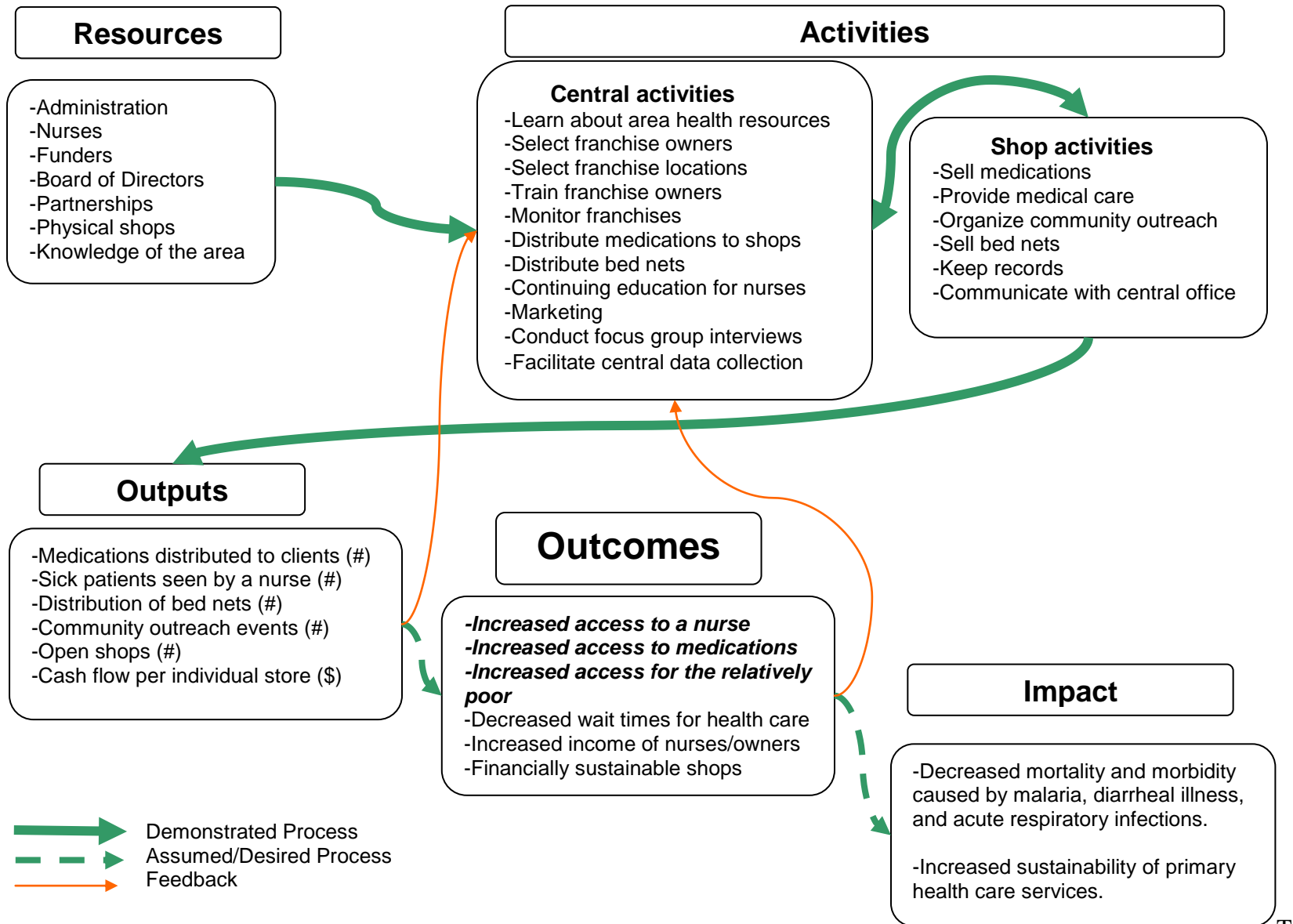
Program Theory

The HealthStore Foundation is operating under the Diffusion of Innovations Theory. This theory describes how products and ideas spread throughout organizations, society and even across different societies. Traditionally, Diffusion of Innovations addresses creative “new” ideas that offer increased efficiency or greater probability to achieve a stated goal. For many, basic medications and health evaluations are certainly not novel. However, to many this idea is still a new concept and adequate circulation to these groups has yet to occur. The HealthStore foundation seeks to be one channel to help distribute the product of medications and the knowledge of health promotion. As founder Scott Hillstrom stated explicitly before opening the first CFWshop, the goal

would be to provide known, simple, effective solutions to preventable causes of death. The technology to save lives from infectious disease is in existence, but it is often not available where it is needed most.

Using the diffusion of innovations theory, I can assess the HealthStore Foundation through five key attributes: relative advantage, compatibility, complexity, trialability, and observability.³⁶ The HealthStore Foundation provides a relative advantage over the status quo because quality medications for infectious disease have a relative advantage over no medications and poor quality medications. The compatibility of the HealthStore foundation with the current culture includes sensitivity to the culture of the different areas and knowledge of the economic situation of the potential clients. Many medications are becoming increasingly inexpensive, allowing the HealthStore Foundation model to be more compatible with low resource settings. With appropriate training, the complexity of diagnosis and treatment is low and side effects are minimal. The trialability aspect has already occurred through the initial CFWshops that were opened and were successful in distributing medications. Finally, observability is an ongoing challenge. The number of medications and other health products disseminated is observable, but the actual magnitude of health effects is very difficult to measure.

The HealthStore Foundation Logic Model



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Explanation of the Logic Model

The HealthStore Foundation is currently operating 65 open shops providing basic care and medications. Already, monitoring has been implemented to collect data on all of the *outputs* listed in this logic model. Based upon the output data, the administrators are adjusting the activities to yield better outputs.

However, the *outcomes* have not been consistently measured to date due to lack of existing data and lack of resources to collect primary data. The one possible exception is the stated outcome of having *financially sustainable shops*. Because this outcome can be determined by the output of *cash flow per individual store* over time, the HealthStore Foundation is able to determine which shops are economically sustainable. This information can be used to provide feedback to the activities such as selection of franchise owners and locations.

This logic model helps to clarify two things. First, it demonstrates the activities that are amenable to modification. Second, it clearly illustrates outcomes that have yet to be measured.

Explanation of Assumptions

The assumptions behind The HealthStore Foundation's approach to improving health are that preventable morbidity and mortality is overwhelming in many developing countries and can be largely averted through increased access to basic health care and a basic set of high quality medicines. This section examines the basic assumptions behind the functioning of The HealthStore Foundation. The quotes are taken from the "HealthStore Presentation" link on the website <http://www.healthstore.org>.

Assumption #1 - “A short list of preventable and treatable diseases accounts for approximately 70% of childhood illness and death in a particular area”

Assumption #2 - “These needless deaths occur because hundreds of millions of people lack access to high-quality essential drugs, diagnostic and treatment services, or preventative health products.”

Assumption #1 – A short list of preventable and treatable diseases accounts for approximately 70% of childhood illness and death in a particular area.

According to the Demographic and Health Survey, the five most common causes of under-5 mortality in Kenya are acute respiratory infection (ARI), diarrhea, measles, malaria, and malnutrition and anaemia.⁵⁶ This shows that infectious diseases are the most common cause of death in children. In the literature review above, I demonstrated that health surveillance data from western Kenya also supports the statement that up to 70% of mortality is preventable in certain age groups. While the HealthStore Foundation quotes this number on their website, CFWSHops are very limited in their ability to influence this number. Much of this preventable mortality occurs in rural areas far outside the catchment area of CFWSHops. CFWSHops must be placed in areas where the population density is high enough to provide enough paying clients to make the shop sustainable. In addition, much preventable mortality occurs in families who have no money to pay for services and thus would have difficulty accessing CFWSHops even if a facility was nearby. It is unreasonable to suggest that all of these deaths can be prevented, but this figure represents mortality that can theoretically be *reduced* through basic health care, essential medications, and preventive services.

Assumption #2 - *These needless deaths occur because hundreds of millions of people lack access to high-quality essential drugs, diagnostic and treatment services, or preventative health products.*

This is a much more challenging assumption to assess. Understanding *what* is happening (proximate cause of mortality) is more complicated than understanding *why* it is happening.

To accept this assumption, I will piece together two different types of information. First, clinical studies show the effect of treating versus not treating specific illnesses such as malaria, acute respiratory infections, and diarrhea. For malaria, treatment has been shown to be effective for more than 60 years.³⁷ Resistance seems to be an accelerating problem in many countries and with many medications.³⁸ Therefore, strategic use of medications must be decided at a national level and accurately implemented by caregivers, and scientists should continue pursuing vaccines. Currently, anti-malarials are the best option for malarial infections and are effective where used appropriately.^{37, 38} Morbidity and mortality caused by infectious diarrhea is consistently reduced with correct use of oral re-hydration therapy.^{39, 40} Acute respiratory infection morbidity and mortality has been reduced through accurate case management and effective treatment.⁴¹

Second, health services research in Africa has shown a positive effect of primary health facilities.⁴²⁻⁴⁴ Specifically, a 2007 study carried out in first level health facilities in Kenya suggests that, all else being equal, appropriate treatment of illness does reduce mortality.¹³ This study reports that appropriate treatment of children with the most serious illness reduce the mortality by 78%. This article highlights that the health care must not just be available – it must be correct. All of the children in this study attended a first level health facility. The children who were treated appropriately achieved the mortality benefit.

Other Assumptions / Aspirations Implicit in Program Logic:

- People who do not already have care can pay for services
- People who do not already have care will use the services
- Using the CFWshops is easier physically or psychologically than going to
another health provider or pharmacy
- People using the services will adhere to their medication regimen.

Program Evaluation

Evaluation Rationale

Reporting the number of patients served and number of drugs distributed is important, however, it remains another step in the process to document barriers to care and attempt to measure the specific barriers that the CFWSHops have helped alleviate. As mentioned in the literature review, health access is a broad term that can encompass many different barriers to health care. However, actual utilization and perception of access are important measures that can be evaluated.¹⁷ The HealthStore Foundation would benefit by attempting to measure the effect that the individual shops have on the health access of their clients, including measuring barriers to care.

The HealthStore Foundation has a vision to significantly increase the number of successfully operating shops; funding and cooperation will be required from large foundations and/or the government. Thus, having data on how the program has improved access to care of their clients could be important in securing support and financial backing. Such an evaluation will show possible funding organizations that the HealthStore Foundation is committed to reviewing the process and the outcomes.

The second component of the evaluation will allow us to assess the relative wealth of the clients through a series of questions about household assets, household utilities, and individual assets. With the use of a survey instrument (described in more detail in a section below), we can compare the wealth index of the individual clients with the wealth index of the Kenyan population that was collected in the 2003 Kenya DHS. A more recent DHS was conducted in Kenya in 2007, but the results are not yet available. When these results become available, they can be compared with those obtained in the survey proposed in this paper. At that point the leadership of CFWSHops will have a

clearer understanding of their clients. Depending upon their vision, they may want to attract wealthier clients to improve fee collection and sustainability. Conversely, they may desire to target poorer clients to serve the most vulnerable populations.

Health access data and objective data on the relative wealth of clients, combined with proven sustainability, may make governments more supportive of CFWshops politically and/or financially. Gaining the political support of local governments would certainly fuel implementation of this franchising program.

Evaluation Plan

This evaluation plan will have two parts. The first part will focus on measuring the short term outcomes of increased access to care and high quality medications. The second part will focus on assessing the relative wealth of the clients in order to determine whether CFWSHops are reaching the relatively poor. Local rural data on health care outcomes and access are either inconsistent or absent. For this reason, I will attempt to triangulate data on health care access and wealth status using 1) a survey of clients of the CFWshops, and 2) results from focus group discussions already carried out by the HealthStore Foundation, and 3) Kenya Demographic and Health Survey.

The survey of CFWSHops clients is designed to be completed in less than 20 minutes. The first part will collect information on actual health care use, perceived barriers to care, actual medication use, and perceived barriers to medication use. The second part will assess wealth status through a series of questions about assets. If the pilot survey used in the CFWshops is successful, it could be used as an ongoing evaluation and feedback tool for The HealthStore Foundation.

Methods

Study Design

The primary goal is to provide information to The HealthStore Foundation in order to help them better understand their client's barriers to care and financial situation. In this light, the study design is an observational, rather than experimental, study. The survey allows us to report the current status of the health access barriers and the relative wealth status of the clients. With this descriptive study design, we can objectively assess SES of The HealthStore Foundation clients. This objective data can be examined alongside the qualitative data from focus group session to create a more complete picture of the CFWSHOP clients.

Survey Development

The survey has two distinct parts to be used for primary data collection. One part is designed to collect data on barriers to care. The other part is designed to assess socioeconomic status of the participants.

To design the first part of the survey, I reviewed instruments used by the Medical Expenditure Panel Survey (MEPS)⁴⁵, as well as instruments used by the National Health Interview Survey (NHIS)⁴⁶. The MEPS and NHIS instruments have been used for many years and have been effective in capturing health access data. In some cases, I have used phrases from questions on these surveys' to capture some of the repeatability of these long standing surveys. To inform the answer choices to some of the questions, I have used preliminary results from focus groups already conducted in areas where CFWSHOPS are located.

Health surveys that are carried out in the United States might not be completely applicable to Kenya because of cultural and health system differences. For this reason, the completion of a pre-test of this survey in Kenya will be critical before implementing the survey in a large number of CFWSHops.

For the second part of my survey, I propose using the questions directly from the 2003 Demographic and Health Survey Household Questionnaire. By reproducing the questions asked on this DHS, I can accurately compare the SES of CFWSHops clients with other samples of the Kenyan population. I will compare clients from individual shops with similar populations and similar geographic regions.

Selection and Data Collection

The survey will be administered face to face. This method of data collection is more expensive and takes more time than telephone, post mailing, or internet surveys. Given the limited infrastructure of the research communities, use of telephone, internet, and post mail surveys are impractical. In addition, face to face interviews will introduce less selection bias than other types of surveys because the response rate with face to face interviews is relatively high.

The survey will be carried out after the patient is finished with the health visit. The survey will be administered by a trained interviewer not associated with the particular CFWSHops and not known to the community. This selection of interviewer will minimize social desirability bias for the patient to report positively about the CFWSHops. In an attempt to avoid multiple members of the same family being interviewed, and minimize a line of clients waiting to be surveyed, every 4th client who comes to the CFWSHops will be chosen for the survey. This number can be adjusted based upon client volume and clinic flow.

The interviewers will first obtain verbal informed consent. Because there is no identifying information on the survey that could link the information to the particular person, verbal informed consent is sufficient.⁴⁷ Then the interviewers will read the questions to the participants and record the answers. The interviewers will offer a hard copy of the survey to the participants during the interview so they may follow along with the interviewer.

All responses will be recorded by the interviewer on a personal digital assistant (PDA). This method of data collection has the advantage of being easy to transport, and easier to organize. In addition, the data recorded on the PDA is automatically coded and can be transferred directly to the statistical analysis software. At the end of every day or week, the interviewers will upload the data collected to a central location for analysis.

Sample Size Justification

In order to select a sample size, I made an assumption about expected differences in the bivariate analysis of Part 1 of the survey. My main outcome measure in the bivariate analysis concerns questions #2 and #10 (See Appendix 1). These questions ask whether anyone in the client's family was unable to see a nurse or doctor when they believed it was necessary. This question is asked in relation to the time before the CFWSshop was opened and compared with the time after the CFWSshop was opened. We will enroll enough patients to be able to determine a 20% difference in access to care with a power of .8 and confidence interval of 95%. Using Stata, these parameters require that 134 clients complete the survey. This many surveys will provide a descriptive picture of the barriers to care and the relative wealth assessment.

Endpoints

Survey Endpoints:

Part I – Barriers to Care

- 1) Do clinic patients now have better access to a nurse/doctor than they did before they started coming to the clinic?
- 2) Do clinic patients now have better access to medications than they did before they started coming to the clinic?
- 3) Is there a difference in time traveled by the clients for health care before and after becoming clinic patients?
- 4) Is there a difference in time traveled by the clients for medications before and after becoming clinic patients?
- 5) What are the current reported barriers to health care among clinic participants?
- 6) What were the reported barriers to health care among clinic participants before becoming clinic patients?

Part II – Wealth Assessment

- 1) How does the socio economic status of all CFWshop clients compare with a comparably urban Kenyan population?
- 2) How does the socio economic status of individual CFWshop clients compare with the population in the area?

Statistical Analysis

Descriptive Analysis

Much of the data collected by Part 1 of the survey gives a descriptive picture of health access data using clinic clients. Most of the data points will give proportions

within each selected group for each question. This data will simply be presented in tables as proportions as shown in Table 1.

Bivariate Analysis

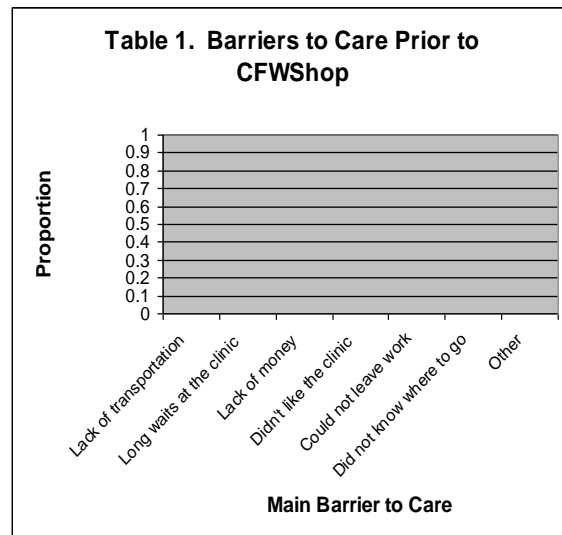
The outcomes of the client survey that require comparison between before and after use of the CFWSshop will be compared using Pearson's Chi-Square test

because the data is categorical. These analyses will be completed for the compilation of all CFWSshops because no individual site will have a large enough sample size to make a conclusion.

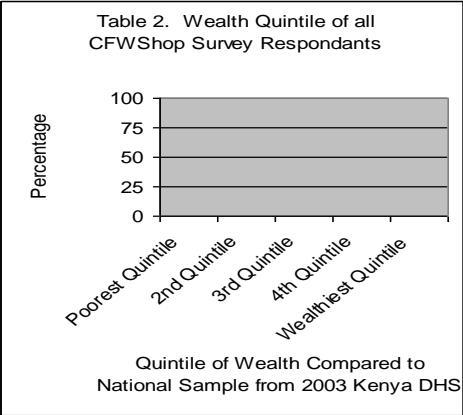
Wealth Indicator Analysis

Part 2 of the survey collects information on wealth assets, which are called indicator variables for the purpose of analysis. After the DHS collected this information, they performed a principal component analysis. The DHS used the SPSS factor analysis procedure to perform the principal component analysis. Through this analysis, SPSS first standardizes the indicator variables. The program then calculates a loading score for each indicator variable. To determine an individual's wealth index, each indicator variable is multiplied by the loading score and summed to produce the wealth index.

I will use the DHS data sets and SPSS factor analysis procedure to calculate loading scores for appropriate subsets of the Kenyan population. Then for for each participant in my survey, I will multiply the indicator variables I collect by the appropriate loading score to determine the wealth index. With this wealth index and a calculation of



the range of quintiles from the selected subset of the Kenyan population, I will be able to place each survey participant into a wealth quintile relative to of the subset of the population. I can thus observe the proportion of clients which are in each wealth quintile. I will create a table with this observation for individual CFWSHops as well of for the compilation of clients throughout the CFWSHops. (see Table 2)



Discussion

This evaluation has several limitations. The client survey will have some level of social desirability bias depending on how well we isolate the results from the franchise owners. Also, this survey will have a significant amount of recall bias as we ask the clients about past events that may have occurred months prior to the survey.

It is important to point out that the participants in this survey, by definition of the selection process, have some level of access to healthcare. The results of the survey on barriers to health access should not be interpreted to represent the general community. This study population is designed specifically for program feedback, not for reporting as local or regional health access data. The barriers to care reported by clients of the CFWShops could possibly represent target areas to reduce barriers to care, but we must be hesitant to make general conclusions based upon the specific study population.

In this evaluation, there are many factors other than the CFWshops that could influence the health access. Some of these include other health facilities, economic gains, patterns of disease, cost of medications, etc. For this reason, it is important to triangulate the results through multiple methods.

The best method of analysis of wealth assets is still under investigation. There are many other ways to assign weights to indicator variables.³⁰ For this study, the choice is to follow the DHS analysis because I will compare my participants with the data collection in the Kenya DHS. As any measure of wealth is country and culture specific; there will not be any set of asset measurements of analysis that proves to be universally superior.

In this paper I use the term relative wealth index to compare the CFWShop clients with a broader sample. However, relative wealth can exist on a national, regional, or local level. A person in an urban setting may be relatively wealthy compared

to a national sample, but may be relatively poor compared to a local sample. Because of local costs, this person may have more difficulty accessing medical care than would be suggested by their nationally relative wealth. As stated in the methods sections, I will attempt to choose appropriate comparison groups, the relative wealth quintiles must be interpreted with some caution.

This research project has two primary goals. The first major goal is for the results to feedback into the program logic model to help The HealthStore Foundation adjust some of the activities. For example, analysis of the barriers to care will help guide the leaders to target those who have problem getting medications or visiting a health care professional. By collecting and analyzing this information from different CFWshops on a rotating, ongoing basis, The HealthStore Foundation can assess the effectiveness of educational, outreach, and assistance programs. They can also compare the survey results between shops to attempt to identify differences between the successful and unsuccessful shops. With this information, The HealthStore Foundation may be able to tailor training messages for shop owners. Cross sectional data on health access and barriers also gives NGO leaders and policy makers a sense of the health access in individual communities. Individual level health access data is important to compliment the population health access data that has been reported through density of health care facilities and distance to health care facilities.

The second major goal of the study is to assess the relative wealth of the clients who use CFWShops. As stated earlier, The HealthStore Foundation goals seem to be at odds with each other. They would like to create a sustainable entity by charging fees for goods and services that allow for-profit business. At the same time, they desire to serve the poor, who have the least ability to pay fees for services. The foundation can certainly attempt to serve dual populations, but they must recognize that they cannot

maximize both goals simultaneously. To reconcile the goals of The HealthStore Foundation moving forward, we should first determine the population currently being served. Once we determine the relative wealth of the clients, The HealthStore Foundation could adjust the marketing strategies of CFWSHops, change products offered and fees charged, and adjust the placement of the shops to seek a different client base. For example, if a shop serves clients with diverse SES, it could attempt to charge fees based relative wealth, or it could market luxury items such as skins lotions or medications for erectile dysfunction that could subsidize necessary medication for the poor. Alternatively, the leadership at The HealthStore Foundation could choose to provide variable levels of financial support for CFWSHops based upon the SES of the client population.

If this survey is continued and the analysis is updated when the new Kenya DHS is released, the HealthStore Foundation could continue to assess the relative wealth of their client base. Without this information they will not objectively know whether they are serving clients in the 2nd highest or 2nd lowest quintile of wealth.

Appendix 1

CFWShop Client Survey

Demographic

1. Sex: ___ M ₁ ___ F ₂

PART I – Barriers to Care (Questions based on the 2006 Medical Expenditure Panel Survey⁴⁵ and the 2007 National Health Interview Survey⁴⁶)

Before coming to CFWshops

Nurse or Doctor

“There are many reasons people are unable to get medical care.”

2. **Before** you started coming to this CFWshop, was anyone in your family unable to see a **nurse** or **doctor** when you believed it was necessary?

- ___ Yes ₁
- ___ No ₂
- ___ Refused ₇
- ___ Don't know ₉

3. **Before** you started coming to this CFWshop: which of the following best describes the **main** reason (PERSON) (were/was) unable to see a **nurse** or a **doctor**, when (he/she) believed it was necessary?

- ___ Not applicable ₀
- ___ Lack of transportation ₁
- ___ Long waits at the clinic ₂
- ___ Lack of money ₃
- ___ Didn't like the treatment they received at the clinic ₄
- ___ Could not take time off work ₅
- ___ Did not know where to go ₆
- ___ Other ₇

4. **Before** you started coming to this CFWshop, how far did travel to see a **nurse** or a **doctor** when you or your family member was sick and needed help?

- ___ <10 minutes ₁ ___ 10-30 minutes ₂ ___ 30-60 minutes ₃ ___ >60 minutes ₄
- ___ Did not see a nurse or doctor ₀

5. **Before** you started coming to this CFWshop, what was the name the clinic or store where you went to see a **nurse** or a **doctor**?

Medications

6. **Before** you started coming to this CFWshop, was anyone in your family unable to obtain **medications** when you believed it was necessary?

- ___ Yes ₁
- ___ No ₂
- ___ Refused ₇
- ___ Don't know ₉

7. **Before** you started coming to this CFWshop: which of the following best describes the **main** reason (PERSON) (were/was) unable to obtain **medications**, when (he/she) believed it was necessary?

- ☐ Not applicable₀
- ☐ Lack of transportation ₁
- ☐ Long waits at the clinic ₂
- ☐ Lack of money ₃
- ☐ Didn't like the treatment they received at the clinic ₄
- ☐ Could not take time off work ₅
- ☐ Did not know where to go ₆
- ☐ Other ₇

8. **Before** you started coming to this CFWshop, how far did you travel to obtain **medications** when you or your family was sick and needed help?

- ☐ <10 minutes₁
- ☐ 10-30 minutes₂
- ☐ 30-60 minutes₃
- ☐ >60 minutes₄
- ☐ Did not obtain medications₀

9. Before you started coming to this CFWshop, what is the name of the clinic or store where you obtained **medications**?

Present – after beginning to come to the CFWshop

Nurse or Doctor

“There are many reasons people are unable to get medical care.”

10. **After** you started coming to this CFWshop, has anyone in your family been unable to see a **nurse** or a **doctor** when they believed medications were necessary?

- ☐ Yes ₁
- ☐ No ₂
- ☐ Refused ₇
- ☐ Don't know ₉

11. **After** you started coming to this CFWshop: which of the following best describes the **main** reason (PERSON) (were/was) unable to see a **nurse** or a **doctor**, when (he/she) believed it was necessary?

- ☐ Not applicable₀
- ☐ Lack of transportation ₁
- ☐ Long waits at the clinic ₂
- ☐ Lack of money ₃
- ☐ Didn't like the treatment they received at the clinic ₄
- ☐ Could not take time off work ₅
- ☐ Did not know where to go ₆
- ☐ Other ₇

Medications

“There are many reasons people are unable to get **medications**.”

12. **After** you started coming to this CFWshop, has anyone in your family been unable to get **medications** for an illness when they believed medications were necessary?

- ☐ Yes ₁
- ☐ No ₂
- ☐ Refused ₇
- ☐ Don't know ₉

13. Which of the following best describes the **main** reason (PERSON) (were/was) unable to get **medications** (he/she) believed necessary?

- ☐ Not applicable₀
- ☐ Lack of transportation ₁
- ☐ Long waits at the clinic ₂
- ☐ Lack of money ₃
- ☐ Didn't like the treatment they received at the clinic ₄
- ☐ Could not take time off work ₅
- ☐ Did not know where to go ₆
- ☐ Other ₉

14. How far do you travel to come to this CFWshop?

- ☐ <10 minutes₁ ☐ 10-30 minutes₂ ☐ 30-60 minutes₃ ☐ >60 minutes₄

PART II – Wealth Assessment (Questions taken from 2003 Kenya DHS⁵)

15. What is the main source of drinking water for members of your household?

Piped Water

- ☐ Water piped into dwelling₁₁
- ☐ Water piped into compound/plot₁₂
- ☐ Water piped to a public tap₁₃

Open Well

- ☐ Open well within compound/plot₂₁
- ☐ Open public well₂₂

Covered Well/Borehole

- ☐ Covered well in compound plot₃₁
- ☐ Covered public well₃₂

Surface Water

- ☐ Spring₄₁
- ☐ River/Stream₄₂
- ☐ Pond/Lake₄₃
- ☐ Dam₄₄

Other

- ☐ Rainwater₅₁
- ☐ Bottled Water₅₂
- ☐ Other₅₃, specify: _____

16. How long does it take you to get there, get water, and come back?

- Minutes ☐ On premises₀

17. How frequently is water available from this source?

- ☐ Usually always available₁
- ☐ Several hours per day₂
- ☐ Once or twice a week₃
- ☐ Infrequently₄

18. What kind of toilet facility does your household have?

- ☐ Flush toilet₁
- ☐ Traditional pit toilet₂
- ☐ Ventilated Improved Pit (VIP) Latrine₃
- ☐ No facility/ bush/ field₄
- ☐ Other₉; specify: _____

19. Do you share this toilet with other households?

- ☐ Yes₁

- ___ No₂
20. How many other household use this toilet?
 ___ Not applicable (No other households use this toilet)₀
 ___ Less than five₁
 ___ Five-nine₂
 ___ 10 or more₃
21. Does your household have:
 Electricity? ___ Yes₁ ___ No₂
 Solar Power? ___ Yes₁ ___ No₂
 A radio? ___ Yes₁ ___ No₂
 A television? ___ Yes₁ ___ No₂
 A telephone or mobile phone? ___ Yes₁ ___ No₂
 A refrigerator? ___ Yes₁ ___ No₂
22. How many rooms in your household are used for sleeping?
 Rooms |___|___|
23. What type of fuel does your household mainly use for cooking?
 ___ Electricity₁
 ___ LPG/Natural Gas₂
 ___ Biogas₃
 ___ Paraffin/Kerosene₄
 ___ Coal/Lignite₅
 ___ Charcoal from wood₆
 ___ Firewood/Straw₇
 ___ Dung₈
 ___ Other₉, specify: _____
24. Main material of the floor.
 ___ Earth/Mud/Dung/Sand₁
 ___ Wood planks₂
 ___ Palm/Bamboo₃
 ___ Parquet or polished wood₄
 ___ Vinyl or asphalt strips₅
 ___ Ceramic tiles₆
 ___ Cement₇
 ___ Carpet₈
 ___ Other₉, specify: _____
25. Main material of the roof.
 ___ Grass/Thatch/Makuti₁
 ___ Tin cans₂
 ___ Corrugated iron (Mabati)₃
 ___ Asbestos sheets₄
 ___ Concrete₅
 ___ Tiles₆
 ___ Other₉, specify: _____
26. State of repair of the dwelling.
 ___ Completely dilapidated shack₁
 ___ Needs major repairs₂
 ___ Needs no or minor repairs₃
 ___ Being repaired now₄
 ___ Under construction₅

27. Does any member of your household own:

A bicycle? ☐ Yes₁ ☐ No₂

A motorcycle or motor scooter? ☐ Yes₁ ☐ No₂

A car or truck? ☐ Yes₁ ☐ No₂

28. Does your household own this structure (house, flat, shack), do you rent it, or do you live here without paying?

☐ Owns₁

☐ Pays rent/lease₂

☐ No rent, with consent of owner₃

☐ No rent, squatting₄

29. Does your household own the land on which the structure (house, flat, shack) sits?

☐ Owns₁

☐ Pays rent/lease₂

☐ No rent, with consent of owner₃

☐ No rent, squatting₄

30. How does this household dispose of kitchen waste and trash?

☐ Regular collection by government₁

☐ Infrequent collection by government₂

☐ Pays for private collection₃

☐ Composted₄

☐ Dump, bury, burn in compound₅

☐ Dump in street, empty plot₆

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